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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/601,937 08/10/00 LEE

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EXAMINER

GONZALEZ, J.
ART UNIT

PAPER NUMBER

2834
DATE MAILED:

03/02/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/601,937

Applicant(s)

LEE, I SOO

Examiner

Julio C. Gonzalez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2000 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the full H-bridges, sensing and nonsensing regions of the commutation encoder, two photo sensors and phases excited must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-4 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 1, applicant discloses the use of H-bridges. What are these H-bridges doing in the stator and what is the advantage of using them? In claim 2, applicant discloses a "cancel phenomenon". What is this cancel phenomenon and why it would be good to remove it? How is it that by having narrow slots this phenomenon is removed?

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant discloses in claim 4 that the number of phases inexcited is greater or equal than 1. Is it possible to have all phases inexcited or the higher number of phases inexcited would be 2? Why is good to have inexcited phases? What if the number of inexcited phases is greater than the desired number (e.g. 2 inexcited phases)?

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Sebastian et al and Bessiere.

Lee discloses a constant power brushless DC motor comprising a stator 4 having multi-phases, each of the winding coils of the stator which are not connected with one another is connected to each of n full H-bridges, n full H-bridges are connected to a DC power supply; a rotor 7 having predetermined number of polarities, which is required to concentrate magnetic flux on excitation area; a commutation encoder (see figure 1) including sensing regions and nonsensing regions (column 8, line 60-65), the commutation encoder being externally set to one side of the shaft 11 of the rotor; and

two photo sensors (column 2, line 2) set to each phase, the two photo sensors being connected to half H-bridge of each phase, to turn on/off the half H-bridge, the distance between the sensing regions of the commutator encoder is determined to allow a phases among n phases to be excited all the time, the a photo sensors recognizing the a phases excited (column 6, lines 8-15). Moreover, Lee discloses the distance between the sensing regions (column 4, lines 27-34), the number of sensing regions in the commutation encoder (column 4, lines 20-22) and the distance between the photo sensors on a sensor plate (column 5, lines 41-45). Also, Lee discloses that the number of phases inexcited can be more than one (column 5, lines 59-64).

However, Lee does not disclose that the wounds are connected in parallel and that the stator has a narrow slots to remove cancel phenomenon.

On the other hand Bessiere discloses a narrow slot for the purpose to eliminate armature reaction flux on the stator (see figure 3 and column 3, lines 7-16). However, Bessiere does not disclose the coils connected in parallel.

On the other hand, Sebastian et al discloses coils of a brushless DC motor connected in parallel (see figure 5) for the purpose of obtaining high current and low voltage (column 4, lines 5-7).

It would have been obvious to one having ordinary skill in the art to design a brushless DC motor with multi phases, a shaft, a rotor and a commutator as disclose by Lee and to have narrow slots in the stator for the purpose to reduce armature flux and to have the coils wounded in parallel for the purpose of obtaining high current and low voltage as disclose by Sebastian et al.

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julio C. Gonzalez whose telephone number is (703) 305-1563. The examiner can normally be reached on M-F (8AM-5PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Jcg

February 27, 2001


NESTOR RAMIREZ
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